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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,573

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EXAMINER

NGUYEN, TU MINH

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

04/14/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/572,573	Applicant(s) HIRATA ET AL.	
	Examiner TU M. NGUYEN	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-8,10-14 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6,8,10,17 and 18 is/are rejected.
- 7) ☒ Claim(s) 7 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20080807</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. An Applicant's Amendment filed on September 12, 2008 has been entered. Claims 4, 5, 9, and 15 have been canceled; claims 1-3, 6, 8, 10, and 12 have been amended; and claims 17-18 have been added. Overall, claims 1-3, 6-8, 10-14, and 16-18 are pending in this application.

Election/Restriction

2. Applicant's election without traverse of the species of Figure 4, 8, or 9 in an Applicant's Response to an Election/Restriction Requirement submitted on February 4, 2009 is acknowledged. Claims 1-3, 6-8, 10, 11, 17 and 18 are readable thereon and will be examined in their full merit. Claims 12-14 and 16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3748

4. Claims 1, 2, 6, 8, 10, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stutzenberger (U.S. Patent 5,605,042) in view of Torimoto (U.S. Patent 4,557,108).

Re claims 1 and 8, as shown in Figure 1, Stutzenberger discloses an engine exhaust emission purification apparatus comprising:

- a reduction catalytic converter (2) disposed in an engine exhaust system (1) to reduce and purify nitrogen oxides by using a liquid reducing agent;
- an injection nozzle (4) that supplies by injection the liquid reducing agent (11) to a flow of an exhaust emission upstream the reduction catalytic converter;
- a temperature maintenance device (7, 9) for maintaining a temperature of at least a part of a liquid reducing agent supply system including the injection nozzle and piping of the injection nozzle at a temperature lower than a boiling point of a solvent of the liquid reducing agent or equal to or higher than a melting point of dissolved matter (see lines 3-20 of column 2), wherein the temperature maintenance device is arranged to route a conduit of engine coolant to a flange (8) for attaching the injection nozzle to the exhaust system to thereby cause heat exchange between the flange and the engine coolant; and
- a circulation control device (a water pump is not shown but obviously must have) for controlling circulation or interception of the engine coolant in the conduit based on a desired range of nozzle temperature.

Stutzenberger et al., however, fail to disclose a nozzle temperature detecting device for detecting a nozzle temperature of the injection nozzle; and that the circulation control device

Art Unit: 3748

controls recirculation or interception of the engine coolant based on the detected nozzle temperature.

As shown in Figures 1-2, Torimoto discloses a combustion apparatus for vehicle, comprising a particle filter (5) and a burner (3) having a fuel supply device (8a) and an air supply device (8b), wherein the burner further comprises a nozzle (10) for injecting a combustible air-fuel mixture into a combustion chamber (9) of the burner. As indicated on lines 6-22 of column 2 and lines 18-31 of column 4, Torimoto teaches that it is conventional in the art to utilize a nozzle temperature detecting device (lines 24-25 of column 4) to detect a nozzle temperature of the nozzle; and a flow of fluid (air) along the outer periphery of the nozzle is controlled based on the detected nozzle temperature. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the nozzle temperature detecting device taught by Torimoto in the apparatus of Stutzenberger, since the use thereof would have been routinely practiced by those with ordinary skill in the art to accurately maintain the injection nozzle within a desired temperature range for preventing clogging of the nozzle.

Re claims 2 and 17, in the modified apparatus of Stutzenberger, the temperature maintenance device comprises a heat insulating member (a wall of the cooling jacket (9)) disposed between the exhaust system and the flange (8) for attaching the injection nozzle to the exhaust system.

Re claims 6 and 10, in the modified apparatus of Stutzenberger, the circulation control device circulates the engine coolant when the nozzle temperature is equal to or higher than the boiling point of the solvent of the liquid reducing agent (see at least lines 3-20 of column 2).

Art Unit: 3748

5. Claims 3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stutzenberger in view of Torimoto as applied to claims 1 and 8, respectively, above, and further in view of Weigl et al. (U.S. Patent 6,513,323).

The modified apparatus of Stutzenberger discloses the invention as cited above, however, fails to disclose that the temperature maintenance device comprises radiating fins provided to be juxtaposed to the flange for attaching the injection nozzle to the exhaust system.

As shown in Figure 2, Weigl et al. disclose a valve seat device for a metering valve of an exhaust treatment station, comprising a valve seat device (19) having a heat pipe (20) to transfer waste heat from the exhaust gas acting on the metering valve (15) to a condenser zone (21). As indicated on lines 46-48 of column 5, in order to improve cooling of the metering valve, Weigl et al. teach that it is conventional in the art to utilize radiating fins (211) provided to be juxtaposed to a flange (191) for attaching the metering valve to the exhaust system. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the radiating fins taught by Weigl et al. in the modified apparatus of Stutzenberger, since the use thereof would have been routinely practiced by those with ordinary skill in the art to effectively cool the injection nozzle to within a desired temperature range to prevent clogging of the nozzle.

Allowable Subject Matter

6. Claims 7 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Prior Art

9. The IDS (PTO-1449) filed on August 7, 2008 has been considered. An initialized copy is attached hereto.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of two patent applications: Nishina et al. (U.S. Patent Application

Art Unit: 3748

2007/0240405) and Cox et al. (U.S. Patent Application 2008/0295500) further disclose a state of the art.

Communication

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tu M. Nguyen/

TMN

Tu M. Nguyen

April 12, 2009

Primary Examiner

Art Unit 3748